

WHAT IS CLAIMED IS:

1. A method of fabricating a semiconductor device including a tunnel oxide film formed on a polysilicon layer, comprising:
 - forming a first film of silicon nitride or silicon oxynitride on the polysilicon layer;
 - forming a second film of silicon oxide on the first film by chemical vapor deposition; and
 - oxygen-annealing the second film to form the tunnel oxide film.
2. The method of claim 1, wherein the first film is a film of silicon nitride, and oxygen-annealing the second film comprises wet oxygen annealing for five to ten minutes.
3. The method of claim 1, wherein the first film is a film of silicon nitride, and oxygen-annealing the second film comprises wet oxygen annealing at 850°C to 900°C.
4. The method of claim 1, wherein the first film is a film of silicon oxynitride.
5. The method of claim 4, wherein the first film and the second film are formed by a continuous process.
6. The method of claim 4, wherein oxygen-annealing the second film comprises dry oxygen annealing for 30 to 60 minutes.
7. The method of claim 4, wherein oxygen-annealing the second film comprises dry oxygen annealing at 850°C to 900°C.
8. The method of claim 4, wherein oxygen-annealing the

second film comprises wet oxygen annealing for 5 to 60 minutes.

9. The method of claim 4, wherein oxygen-annealing the second film comprises wet oxygen annealing at 850°C to 900°C.

10. The method of claim 1, wherein:

the polysilicon layer is formed on a silicon substrate and constitutes a first floating gate;

the semiconductor device also includes a second floating gate formed on the silicon substrate, overlapping at least an edge of the first floating gate; and

the first film, the second film, and the tunnel oxide film separate the first floating gate from the second floating gate.

11. The method of claim 10, wherein the first film is a film of silicon nitride, and oxygen-annealing the second film comprises wet oxygen annealing for five to ten minutes.

12. The method of claim 10, wherein the first film is a film of silicon nitride, and oxygen-annealing the second film comprises wet oxygen annealing at 850°C to 900°C.

13. The method of claim 10, wherein the first film is a film of silicon oxynitride.

14. The method of claim 13, wherein the first film and the second film are formed by a continuous process.

15. The method of claim 13, wherein oxygen-annealing the second film comprises dry oxygen annealing for 30 to 60 minutes.

16. The method of claim 13, wherein oxygen-annealing the second film comprises dry oxygen annealing at 850°C to 900°C.

17. The method of claim 13, wherein oxygen-annealing the second film comprises wet oxygen annealing for 5 to 60 minutes.

18. The method of claim 13, wherein oxygen-annealing the second film comprises wet oxygen annealing at 850°C to 900°C.